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The XXI International Grassland Congress / VIII International Rangeland Congress took place in Hohhot, China from June 29 through July 5, 2008.

Proceedings edited by Organizing Committee of 2008 IGC/IRC Conference

Published by Guangdong People's Publishing House

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Wild populations of red clover and their agro-morphological characteristics in Latvia climate conditions

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Key words: red clover, wild populations, morphological characteristics

Introduction Latvia is situated on the bank of the Baltic sea, in a temperate climate area, therefore forage grasses and legumes are very important plants in fields, as well as widely spread in natural meadows, pastures and other biocenoses. Red clover is a regular component of numerous associations in wild flora. Since 2000, 13 research expeditions have been organized with the aim to collect forage grasses and legumes in Latvia (B. Jansone *et al.*, 2007). The goal of our research was to study the diversity of agromorphological traits of red clover, collected from different locations in Latvia: winter hardiness, earliness, number of internodes, seed production and other.

Materials and methods During 2006-2007 a small-plot trial was established at the Latvia Research Institute of Agriculture. The soil was a sandy loam with organic matter content 2.3, P_2O_5 -154 mg kg⁻¹, K_2O -121 mg kg⁻¹, pH_{KCl}-6.2. Ten different accessions of red clover were sown in May. The variety Skīveru agrais was chosen as a standard. Randomized complete block design with 3 replications was used. Every accession was sown in 2 rows, 2 m long, 60 cm between rows. The next spring we estimated winterhardiness, earliness, determined phenological phases, seed production and other.

Results The differences between red clover wild accessions for agromorphological characteristics were highly significant (E. Vilčinskis *et al.*, 2007). In our experiments winterhardiness in red clover varied from 30% to 85% (Figure 1). All accessions showed lower winterhardiness than the standard variety Skīveru agrais. Flowering time was diverse among red clover ecotypes. In Latvian climate very early (2 VI) flowering accession No. 6, 5 VI-No. 27, but some of them were later as standard (Figure 2). The most variable trait was seed production (Figure 3).

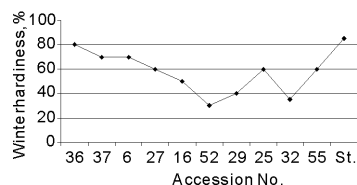


Figure 1 Variability of winterhardiness.

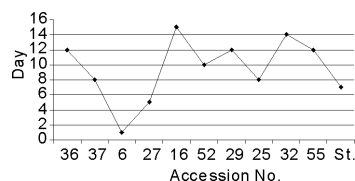


Figure 2 Diversity of flowering time.

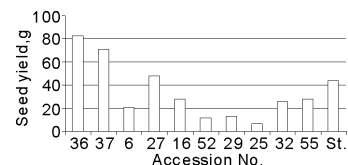


Figure 3 Seed yield per plot.

Conclusions Agromorphological characteristics in wild populations of red clover have high diversity. Some wild ecotypes showed rather high seed yielding capacity, some were extremely early and had other useful characteristics. Wild populations of red clover are a rich source of variability for breeding new varieties of this species for selected purposes.

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